

Fall 2008

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This is the fourth in a series of quarterly newsletters designed to inform growers in Contra Costa County about issues important to the Agricultural community. We welcome your questions and comments about any topics in this newsletter as well as suggestions for future newsletters. Contact us at:

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or visit our website at: www.co.contra-costa.ca.us/depart/agriculture/index.htm

Pesticide Continuing Education

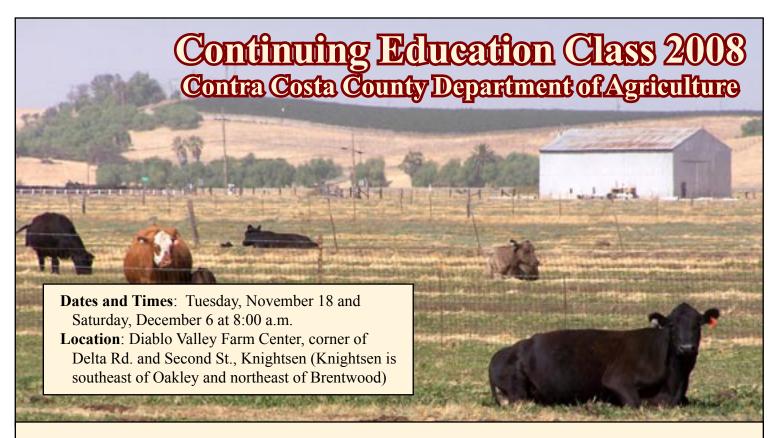
Growers who use or supervise the use of restricted pesticides in order to produce an agricultural commodity must have an appropriate license or certificate. Many growers satisfy this requirement by getting a Private Applicator Certificate (PAC). The PAC is valid for up to three years and then must be renewed. PAC holders may renew their certificates either by taking approved continuing education courses or by retaking the PAC examination.

Continuing education offers many benefits to growers. It helps ensure the production of safe commodities and protects the public, the growers' employees, and the environment. It refreshes the pesticide user's knowledge and provides information about changes in the law. Connecting with other growers also allows them to share information about new methods, materials, and equipment.

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Continuing education offers many benefits.



All Growers are encouraged to attend.

Hours also qualify for QAL, QAC and PCA credits.

Schedule of Events

8:00 a.m.	Registration and sign-in
8:15 a.m.	Update on the Pest Detection Canine Program
	Speakers: Mariah Slusser and Cecilie Siegel-Sebolt,
	Contra Costa County Department of Agriculture
8:35 a.m	Record Keeping for the New Respiratory Protection Program
	Speaker: Ann McClure, Contra Costa County Department of Agriculture
9:00 a.m.	Cherry Buckskin Taskforce Update
	Speaker: Local Brentwood Grower
9:15 a.m.	San Joaquin County & Delta Water Quality Coalition Information
	Speaker: John Brodie, San Joaquin County & Delta Water Quality Coalition
9:45 a.m.	Break
9:55 a.m.	Employer Training Responsibility (Fieldworker and Handler)
	Speaker: Jorge Vargas, Contra Costa County Department of Agriculture
10:25 a.m	Light Brown Apple Moth Treatment: Sterile Moth Technique
	Speaker: Joe Deviney, Contra Costa County Department of Agriculture
10:45 a.m.	Heat Illness Prevention and Awareness
	Speaker: David Becker, CAL OSHA
11:20 a.m.	Glassy-winged Sharpshooter Update
	Speaker: Elizabeth Montgomery, Contra Costa County Department of Agriculture
11:35 a.m.	Class verifications, R-Z Private Applicator Certificates issued

Please RSVP by November 14, 2008 to (925) 427-8610

PAC holders who wish to renew their certificates using continuing education hours must complete a certain number of hours to qualify. If their PAC has been valid for more than 24 months up to 36 months, growers must take six hours of continuing education with at least two hours of that time being about pesticide laws and regulations. For more than 12 months to 24 months, there must be four hours with two hours of pesticide laws and regulations. PAC holders whose certificates have been valid for less than 12 months do not need any continuing education in order to renew their certificates.

Continuing educaton is available from a variety of sources. Most county Departments of Agriculture offer courses that cover topics useful for growers. These courses are usually also open to growers from other counties. If you wish to attend a course in another county, check with them for specific information.

There are many other places to get approved continuing education hours than just from the county Departments of Agriculture. Some of these courses are open to the public and some do not charge a fee for attendance. The University of California offers continuing education on a Pesticide manufacturers, variety of subjects. dealers, and professional organizations often give presentations that are good for approved hours. Continuing education courses intended for Qualifed Applicator Licenses and Certificates (QAL, QAC) can also be used for PAC's. A complete list of approved courses can be found on the Department of Pesticide Regulation website at www.cdpr.ca.gov/docs/license/classes.htm.

When growers attend a course not given by their own county Department of Agriculture, they should make sure they bring their brown PAC card or have their PAC number with them. They also need to get an official verification of attendance from the course provider. A copy of the verification of attendance must be given to their own county Department of Agriculture in order to ensure the grower receives full credit for the course.

Where Have All The Bees Gone?

Starting in 2006, beekeepers in the United States began to report the mysterious loss of 30-90% of the bees in their hives. This syndrome, called "colony collapse disorder" or CCD, results in the disappearance of adult bees, leaving the immature bees and honey behind. Even in the winter when populations of adult bees normally drop, this level of loss is highly unusual.

A healthy population of bees is important for both agriculture and the natural environment. Bee pollination is vital in order to produce melons, squash, cucumbers, seed crops, etc. Many fruits and nuts, such as almonds, cherries, plums, and apples, require cross pollination between different varieties to bear fruit. Bee pollination can also increase the yield in many other crops. An estimated one third of our daily diet relies directly or indirectly on bee pollination.

Many native plants also require or benefit from pollination in order to reproduce. These plants evolved to use native bees and other insects for pollination. However, reduced numbers of native pollinators due to habitat loss, competition, and other factors have created a need that is often filled by the European honey bee.

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Bee pollination is vital for many crops.

The last twenty years have seen the introduction of some serious bee parasites and diseases. Varroa mite first became a problem in California in the late 1980's. The mite attaches to a bee and feeds on its hemolymph (the equivalent of a bee's blood). During this process, the mite can seriously weaken the bee and infect it with diseases. Large infestations may kill a hive.

Tracheal mites, which also arrived in California in the late 1980's, are another serious parasite. The mites attach inside the bee's breathing tubes (the equivalent of its lungs) and feed on its hemolymph. Infected bees become so weak they can't fly or take care of the hive.

Israeli acute paralysis virus (IAPV) is a recently identified disease first described in Israel in 2002. It causes the paralysis and death of bees and is considered to be strongly associated with CCD. It may originally have entered the United States in imported European honey bees.

European honey bees are at a greater risk from parasites and diseases than native bees who typically live alone or in small colonies. European honey bees live together in large groups so infections can spread quickly throughout a hive, much as epidemics tend to spread faster through cities than through rural areas. Hives weakened by parasites and disease may also be raided by stronger hives that end up carrying the infection back home with them.



A Varroa mite attacking a bee.



Monitoring for Varroa mite.

Human activity can often make matters worse. Managed bee hives may be moved over great distances in order to supply pollination services. Colonies can become infected in one region and then spread it to others. Also, beekeepers typically replace queen bees in order to improve the colony. If the new queen has diseases or parasites, she can infect the rest of the hive.

There are many theories in the popular media to explain the cause of CCD. One, which was quickly discounted by experts, was that cell phone signals prevented bees from finding their way back to their hives. Other popular theories for CCD include pesticides, inbreeding, genetically modified crops, pollution, global warming, and even that it is a sign of the Apocalypse.

Researchers at the USDA Agricultural Research Service have been investigating four potential causes of CCD: parasites; diseases; environmental stresses including pesticides; and the management and nutrition of colonies. Many researchers believe that CCD is the result of not just one, but a combination of several factors. This will make it harder to identify which one of many possibilites are to blame.

Another problem is getting samples. When a CCD incident is reported, the adult bees are already gone. There are no affected bees to analyze and its too late to look for any changes

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As CCD continues to affect the availability of bees, pollination service costs will increase.

in the colony that might have led to the collapse. Researchers are closely monitoring specific hives in apiaries that have had outbreaks of CCD in the past. If any of these hives have a future outbreak, there will be detailed information on what happened before the collapse.

Many questions will need to be answered in order to explain CCD. Has IAPV suddenly become more virulent? Could newer pesticides not in use before 2006 be to blame? Although pesticides are checked for bee toxicity prior to registration, there may have been unexpected long term effects. USDA will try to explain the cause of CCD by looking at pesticide exposure plus IAPV, then pesticide exposure plus the Varroa mite. If neither of these provides the answer, they will go on to test other combinations of factors.

As the availability of bees decreases, the cost of pollination will continue to increase. Bee hives have become a hot commodity. Theft of hives has become such a serious problem that many beekeepers have to place identity tag microchips in their hive boxes to deter thieves.

With fewer European honey bees around, native bee populations have increased in recent years. There are studies showing that native bees can provide effective pollination in some crops. By providing habitat, growers can help increase the population of native bees and in return, get the benefit of increased pollination of their crops.

Notices of Intent

In 1976, the California Attorney General ruled that grower pesticide permits were subject to the California Environmental Quality Act (CEQA). For each pesticide application, CEQA requires an Environmental Impact Report (EIR) to document the environmental impact at the site, mitigation measures, and the consideration of alternatives. The California restricted materials permit program, which includes notices of intent, was developed to substitute for a full scale EIR.

The restricted material pesticide permit satisfies part of the requirements of an EIR by identifying: responsible persons, pesticides that could be used; fields that could be treated; surrounding sites that might be harmed; and pests to be controlled. The notice of intent supplies more specific information about the application: time; method; pesticide; dilution; crop; acreage; and any environmental conditions that might have changed since the permit was issued.

The county Departments of Agriculture review notices of intent to determine if the application can be made without causing harm to the environment. If they believe it will cause harm, the Departments will either not allow the pesticide application to take place or put conditions on it. Although the law requires that pesticides be

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Notices of intent for restricted pesticide applications are a part of the environmental review process required by CEQA.

kept confined to the treatment site, there is a risk of drift, leaching, runoff, etc., even when the applicator takes all due care. The review of notices of intent by the county Departments of Agriculture provides an extra level of protection for the environment.

The most common reason for denying or conditioning a notice of intent is when sensitive sites are nearby. Usually, when people think about environmentally sensitive sites, they think about endangered species and waterways. However, there are many other types of sensitive sites. Quite often, they are places where people live, play, or work. Schools, daycare facilities, and playgrounds are of special concern.

Agricultural fields can also be sensitive sites. Fieldworkers and other employees may be working in or near fields to be treated. Leaching and runoff from treated fields can cause heavy losses to neighboring sites. Pesticide drift may lead to the destruction of a neighboring crop if it leaves residues beyond an allowable tolerance or contaminates a field that is under organic production. Some pesticides, such as 2,4-D, can produce a gas or vapor that may damage nearby sensitive plants.

Weather conditions may lead to the denial or conditioning of notices of intent. Temperature inversions trap pesticide droplets near the ground, creating a concentrated cloud. High winds increase the probability of drift. Pesticide runoff is far more likely when heavy rains are due



Forecasted weather conditions may lead to the denial of a notice of intent.



Residential areas are a very common sensitive site of concern for pesticide applicators.

shortly after the application. This is a big problem during the winter dormant spray season when runoff caused by rain leads to high levels of insecticides in surface waters.

Livestock, especially bees, can be at high risk from pesticides. Bees will fly into any field where there are crops or weeds blooming. Some encapsulated pesticides, such as Penncap, even resemble pollen and will be taken back to the hive. Notices of intent are especially important in areas where bees are used for crop pollination. Beekeepers can register with their county Departments of Agriculture to receive prior notification of pesticide applications. Conditions placed on notices of intent for the protection of bees can include requiring a buffer zone between blooming plants and the treatment site; notifying beekeepers; and scheduling applications when bees will not be flying.

The types of conditions placed on notices of intent can vary. Buffer zones protecting sensitive sites are very common. Pesticides applied near populated areas may be restricted to certain times of the day or week. Some pesticide formulations, additives, application equipment, and methods of use could be required or prohibited. There might be pesticides that could not be used near sensitive crops. Pesticide applications may be allowed only under certain weather conditions or months of the year.

Notices of intent must be filed at least 24 hours before the application (more time may be required in some cases) in order to give the county Departments of Agriculture enough time to review them. The applicator has four days from the time stated on the notice of intent to begin the application. If conditions do not allow the application to take place within that time, a new notice of intent must be filed. For treatments on a continuous basis, such as rodent baiting, a notice of intent covering a calendar month may be permitted. Contact your county Department of Agriculture for further information.

Many pest control businesses and pest control advisors will file notices of intent for growers as a part of their services. However, ultimately it is the responsibility of the operator of the property to file notices of intent. If a notice of intent has been denied or has had conditions placed on it, the county Department of Agriculture will notify the operator of the property and will make every effort to inform the pest control business too. The operator of the property, however, remains responsible to ensure that the conditions placed on the notice of intent are satisfied, regardless of who applies the pesticide.

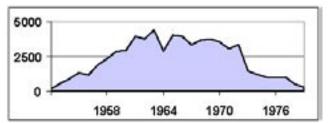
In Contra Costa County, notices of intent may be filed with either our Concord or Knightsen offices. Notices of intent may be faxed, dropped off, or phoned in. Please make sure that you provide complete information and allow us plenty of time to review them.



Property operators are responsible for ensuring that notices of intent are filed.

Contra Costa County Yesterdays

During the late 1950's to early 1960's, lettuce became a major vegetable crop in Contra Costa County. Lettuce acreage in 1953 was less than 200 but grew to over 4,000 acres by the mid 1960's. The only vegetable with more acreage than lettuce in 1964 was asparagus. What changed in that time was the realization of a marketing opportunity. Contra Costa County growers were able to satisfy the demand for fall lettuce during the time between the spring/summer crop produced by the Salinas area and the winter crop grown in the Imperial valley.



Above: lettuce acreage from 1953 through 1980. Below: lettuce harvest in the 1960's.



Competition from other regions in California eventually ended the market. The growing season for lettuce was extended by the development of new cold and heat tolerant varieties. New Federal and State water projects completed in the late 1960's, such as the San Luis Canal and the California Aqueduct, began to supply the western portions of Fresno, Merced, and Kings counties with supplemental irrigation water. Many growers in those areas shifted from major field crops to higher valued commodities like lettuce. In 2007, there was less than 10 acres of lettuce grown in Contra Costa County.



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